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JULY, 1935
VOL. XI, No. 1

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CANADIAN GEOGRAPHICAL JOURNAL

In This Issue

SHIPS OF THE TIMBER TRADE

By Frederick William Wallace

GOLD IN CARIBOO	By Edgar Cameron Reid
GLIMPSES OF ROME	By Hon. Charles Murphy
CHATEAUGUAY	By Allan Dale
IN A POLE BARGE ON NIGERIAN RIVERS	By E. D. Ward
PEOPLE OF MALACHI	By Claude W. Gray

PUBLISHED BY

The Canadian Geographical Society

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Canadian Geographical Journal

Published monthly by

THE CANADIAN GEOGRAPHICAL SOCIETY

EDITOR

LAWRENCE J. BURPEE

Ottawa, Canada

PUBLISHER

GEORGE A. MACKIE

Fifth Floor - Sun Life Building - Montreal



July 1935,

Entered as second-class matter at the
Post Office, Montreal, Canada

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The British standard of spelling is adopted substantially as used by the Dominion Government and taught in most Canadian schools, the precise authority being the Oxford Dictionary as edited in 1929.

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Membership fee is \$3.00 per year in Canada and other parts of the British Empire, which includes delivery of the Journal, postpaid; in United States and Mexico, \$3.50; in other countries \$4.00. Make membership fee payable at par in Montreal.



Stripped for a bout with Boreas—the clipper under storm canvas of fore and main lower topsails and foretopmast-stays'l.



Brezing up and the mainsail comes in. All hands aloft on the mainyard rolling up the canvas and making it fast.

Ships of the Timber Trade

By FREDERICK WILLIAM WALLACE

(Photographs taken aboard the Ship "Grand Duchess" are by the author)

THE romantic atmosphere which surrounded the sailing ships, their comings and goings, and the men who sailed them, has grown greater in public interest as the ships and their era have passed. Exclusive of training ships, the number of commercially-employed square-riggers afloat today is less than thirty. These survivors, all steel hulls and the largest of their type, were most of them built late in the day and in the ordinary course of events would have gone to the break-up yards long ago. Sentiment, however, has kept the majority of them in service; sentiment plus the most rigid economy in operation and the peculiar circumstances of an Australian grain situation which provides them with cargoes once a year. A few smaller barques freight timber from Baltic ports to England.

The square-rigger has gone from the coasts of Canada, yet Canada provided them with cargoes up to comparatively recent years. Australian grain keeps the dying fleets precariously alive today

because of the fact that the ships are willing to load in obscure ports where there are no elevators or loading facilities such as are required by steamers. The three-months' passage home also provides free storage for the wheat, bringing it into port at a time when prices are likely to be favourable. Prior to the advent of this particular cargo movement, which is one of recent growth, Canadian timber kept more of these latter-day sailing ships in service than any other commodity. One of the last cargoes to be loaded in a square-rigger from a Canadian port went out in 1928 when the steel four-mast barque *Garthpool* took a lumber freight from Campbellton, N.B. to Australia. Incidentally, the *Garthpool* was the last square-rigger to remain under the British flag. She was lost in 1929.

In the mind of most people, the Golden Era of Sail is too-often associated with the freighting of such colourful cargoes as tea from China, spices and sandalwood from the East

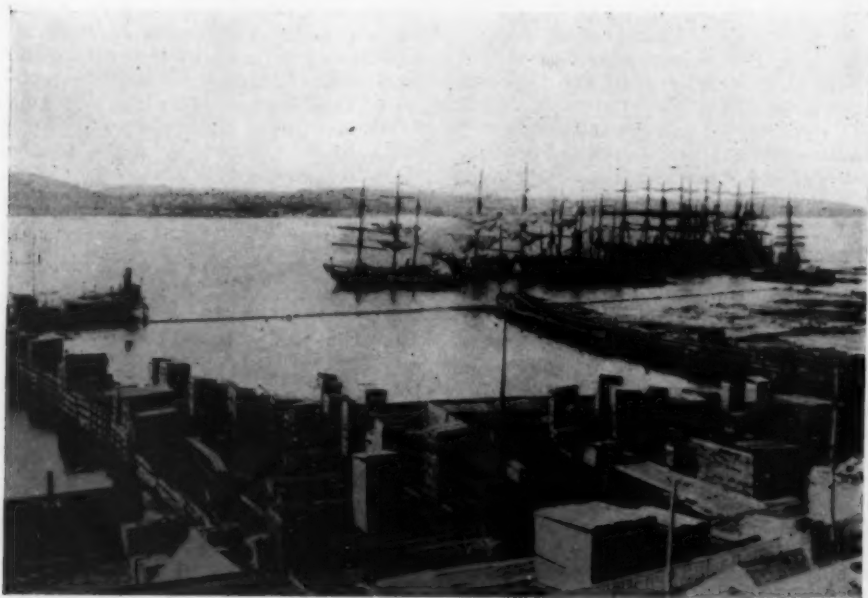
Indies, wool from Australia. Such loadings were valuable and carried in swift, well-built ships—the best of their class. But the number thus employed was a mere bagatelle in comparison with the vast fleets engaged in carrying less romantic freights. The great merchant navies of Great Britain, Norway and Canada, in the sailing ship days, expanded and thrived on the transport of lumber, coal, nitrate, grain, cotton, and similar bulk cargoes. And of these, lumber played as momentous a part as any.

The growth and expansion of Canada's overseas trade since pioneer settlement may be truthfully said to have had its genesis in our forests of pine and spruce. It was our first major industry. Not only did it provide an important source of employment and wealth to a large percentage of the population for at least half-a-century prior to the development of agriculture and the opening up of the Western wheat fields and cattle ranches, but it was also responsible for the creation of a Canadian merchant marine which in 1878 ranked fourth in the shipping tonnage of the world.

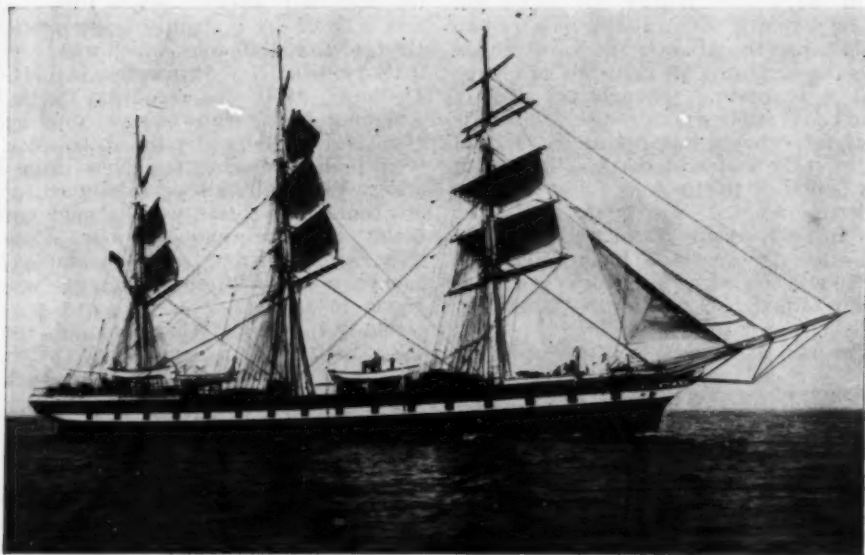
The export of timber from Canada to Great Britain began to assume some importance at the opening of the nineteenth century. It was in 1808 that attention was focussed on the forest wealth of British North America when Napoleon brought about the closing of the Baltic ports, thereby cutting off England's usual timber supply. In that year, a large fleet of ships converged on Quebec to load oak and pine, ship's masts and staves, and the development of the trade may be said to have commenced at that date.

Keeping pace with the increasing exports of wood was the construction of ships in Quebec and the Maritime Provinces. Built cheaply, and principally for the carriage of timber, these early craft found ready buyers in British ports. And thus another industry was stimulated.

By the year 1825, the Canadian timber trade had expanded considerably. The great river valleys of the Saint John, the Miramichi, the St. Lawrence and the Ottawa were yielding a harvest of pine, spruce, tamarac and other woods which were



Quebec wharves in the days of the timber trade.



Once a famous Australian clipper, latterly a training ship under British and Russian flags, this handsome iron sailing craft, built on the Clyde in 1873, made the second last voyage of her career carrying a cargo of logs from Montreal to Liverpool in 1920. Famed as the "Hesperus" of the Orient Line under the British flag, she was renamed "Grand Duchess Maria Nicolaevna" when purchased by Russians as a training ship in 1899. The photograph shows her as a Russian cadet ship in 1914. She was the last square-rigger to load timber in Montreal. The author made the passage across in her.

Photograph by courtesy of Charles R. Patterson.

rafted down to the ports for shipment overseas. Some of it was sawn into deals and boards, but for the most part it was put aboard sailing ships in the form of squared logs.

The carriage of this yearly mounting export of timber and the peculiar requirements of the trade gave a stimulus to the construction, in Canada, of sailing ships far exceeding in size the usual type of merchantman built in England. Prior to the launching of these huge "Quebec-men," the transport of wood was in small vessels—oak-built, copper-bolted, lubberly tubs, built in British yards at a cost high in comparison with the Colonial-built ships. Directly influenced by the timber trade, therefore, was the building of large ships in the districts of Quebec, the Miramichi and the Saint John. Constructed of spruce, tamarac, pine and other woods, with high 'tween-decks and fitted with bow and stern ports for loading long lengths of timber, these vessels were not only suitable for the North American lumber trade in summer

but also proved of service in the freight-ing of baled cotton from the Southern States in winter. Though not as lasting, perhaps, as the British oak-built ships, nevertheless their size and cheapness commended them to the shipowners of Liverpool, Glasgow, London and other Old Country ports and hundreds were sold there.

As an instance of the importance of the St. Lawrence timber trade over a century ago and its incentive to ship construction, we record the building near Quebec in 1824 and 1825 of the huge four-masted sailing ships *Columbus* and *Baron of Renfrew* — the former of 3,690 tons, the latter 5,294 tons, and both over 300 feet in length. Built of massive timbers put together so that they could be taken apart in England without much loss of material, the holds of the ships were packed solid with logs of oak and pine. The *Columbus* made the passage across safely and discharged her cargo in the Thames, but instead of being broken up, she was sent out again to Saint John for another lading.

On the passage thither, she foundered. The *Baron of Renfrew* also managed to get across the Atlantic but was stranded in the English Channel while in charge of a steam-tug. Though not strictly orthodox sailing ships, they were the largest canvas-propelled ocean craft of their time and held that distinction for a period of thirty years following their destruction.


In 1839, a ship of 1267 tons called the *United Kingdom* was built in Quebec. She was the largest full-rigged merchant ship of orthodox type to be launched in Canada prior to 1840. Sold in Liverpool, she was the biggest ship belonging to

the port until 1842, at which time she was eclipsed by a slightly larger craft, the *Greenock*, 1307 tons, which was built in Buctouche, New Brunswick, in 1841. Up until 1850, the majority of the merchant sailing ships of great tonnage (for those times) under the British flag were built in Quebec and New Brunswick. Practically all were designed for the timber and cotton trade, though not always exclusively employed in it. When new, tight and strong, profitable employment for these "timber-droghers" was found in voyages to other parts, particularly to India. When they outlived their usefulness in such service, they could always go back to the lumber trade.

The boom times of Canadian shipbuilding, the 'fifties, came into being with the discovery of gold in Australia and the consequent rush of emigrants to that remote Eldorado. The demand for large sailing vessels capable of transporting hundreds of emigrants—as many as 930 souls in one 1600-ton ship—could not be met by British yards. The demand was filled, at the start (1851-1852), by the huge timber ships of Canada. New, or nearly-new, vessels of this type were snapped up as they arrived in Mersey or Clyde with their freights of logs or deals. The cargoes were quickly discharged, the ships docked and fitted up for the carriage of emigrants and gold-seekers, and emerging as "noble clipper ships" they were sent booming off to Sydney and Melbourne crammed with eager passengers.

Being constructed of light woods and strongly put together, and



A view from the end of the bowsprit looking aft. The ship is making  about 7 knots in a light breeze.

not deeply laden with cargo, these big wind-ships made good comfortable sea-boats and would stand driving. In the heavy winds prevailing between the Cape of Good Hope and Australia, and from Australia to the Horn, they made splendid passages—in fact the fastest recorded up to that period. As a result, the shipyards of Eastern Canada were flooded with orders for similar vessels as well as for others better finished and specially equipped for the Australian run. But, of the many hundreds thus employed and dignified by the name of "clipper," most were actually "timber-ships" and many returned to that trade when their usefulness in the Liverpool-Australia packet service was over.

Active in the development of the Canadian export of timber were a number of British firms which established branches in Quebec and in several New Brunswick ports. Several amassed great wealth in the business. Almost a century ago, a synonym for opulence was to be "as rich as an Indian nabob." On a par with that, however, one also heard of the "timber barons of Quebec and the Miramichi." Timber and ships made fortunes for many in those areas. Dominating the trade for decades were such firms as Farnsworth & Jardine, Pollok, Gilmour & Co., and various houses of Gilmours, Rankins and Ritchies — all with established branches at Montreal, Quebec, and Chatham, Bathurst, Campbellton, Dal-



Viewed from a ship's boat in mid-Atlantic, the old timber-drogher is still the clipper ship in her fine bows and shapely hull. The "Grand Duchess" ex "Hesperus" under short sail while carrying basswood logs from Canada to England.

housie, Saint John and other New Brunswick ports. All built ships in Canada and the firm of Pollok, Gilmour & Co. maintained a large shipyard in Quebec. Beginning in 1831 with a ship of 587 tons, they built ships for their own timber trade until about 1855. In 1848, they owned forty ships built by themselves — many being of large size and tonnage for the times. In later years, when their lumbering interests declined, they continued to operate iron ships between Liverpool and India.



Ship "Columbus," 3,690 tons, built 1824 at Quebec, and the largest vessel of her time. From an old lithograph in the Ross Robertson Collection, Toronto Public Library.

In the heyday of the overseas trade in wood from Eastern Canada, roughly comprising the period from 1840 to 1890, the traffic was almost entirely confined to sailing ships. As the largest was seldom more than 2,000 tons register, the number of vessels employed made up an immense fleet each year. The greatest concentration was in Quebec and it is said that as many as 500 sailing craft of all rigs, ships, barques, brigs and brigantines, could be seen in the port and vicinity at one time during the boom days of the business, and a fleet of more than 1,300 square-riggers frequented the port in a season. In addition, during the period of open navigation, fleets would be found in varying numbers at numerous ports within the Gulf of St. Lawrence. Saint John and the Bay of Fundy ports also commanded their quotas.

With so many ships coming to the ports of Eastern Canada to load timber, only a few were able to secure westward cargoes. The majority of the vessels came in ballast, but a large number

made money on the outward passage by carrying emigrants at low rates. In the years prior to 1860, no great expense was involved in fitting up a ship for emigrants. Rough berths were knocked up in the 'tween decks; the passengers provided their own bedding and most of their own food. Many thousands came to Canada in this manner—particularly from Ireland during the famine years. In 1847, almost 110,000 persons landed in our ports from Great Britain and Ireland. In numerous instances, the emigrants experienced terrible hardships on the passage aboard these unregulated, unsuitable timber-droghers. Many died from the dread ship-fever; others were landed sick and weak from long confinement and improper food during the course of journeys lasting from six to twelve weeks at sea. On the other hand, in ships where some degree of thought and supervision was exercised, the emigrants managed to get across without mishap and for a price much lower than they could have got in the regular passenger-carrying packets.



Timber ships loading at Sillery Cove, Quebec. Square timber in the water, deals on the dock.

While many of the vessels in the timber trade, during the time when ships were built of wood, were first-class in most respects, yet it was a trade that also attracted a large number of ships that were strained and worn-out. Lumber was the only cargo they could carry since it would help to keep them afloat. In the 'seventies' and 'eighties', the percentage of these leaky, unseaworthy hulks engaged in "droghing" timber and deals across the North Atlantic became so high, and the losses of ships and men so numerous, as to bring odium on the trade in the eyes of seamen and underwriters. Heartless overloading by piling huge deck-loads on the ships was also a factor which accounted for much loss and hardship. In the fall of 1872, timber-laden ships from Quebec and the Miramichi literally strewed their fabrics and cargoes across the Western Ocean. In December of that year, 24 ships and barques were abandoned at sea. During the St. Lawrence season of 1872, fifty-seven timber-laden vessels were wrecked or abandoned. Over a hundred lives of seamen were lost and the sufferings of others were appalling.

In the 'eighties, when Lord Brassey was in Quebec, he reported that the state of the wooden ships loading timber was "deplorable". Almost all the vessels he saw had windmill pumps working continuously discharging the water which seeped through their strained and sodden hulls. By that time, however, the majority of the ships were no longer British, but Norwegian, though many were Canadian-built originally.

The limits of this article do not permit a more extensive review of this phase of the story. But the history of the Canadian timber trade in its marine aspect is linked up by numerous strands to the development of commerce and navigation during the greatest period of nautical endeavour in the annals of world trade and seafaring. It played a major part in the commercial expansion and settlement of Canada; it founded and maintained to no small degree our one-time extensive deep-sea merchant marine. It contributed large and fast ships to Britain's fleets at a period when her own shipyards failed to cope with the competition of the young and lusty United States, the



Above:—Looking down from aloft on the log-piled, main-deck of the old clipper. Under such conditions, working ship was difficult owing to the lack of stable footing, especially at night or when the vessel was rolling.

transport demands of the nineteenth century wars and a rapidly growing Colonial empire. It might not be too much to say that without the timber and the ships of Canada during the age of wooden hulls, England's mercantile marine might have been long delayed in attaining its paramount influence upon the Seven Seas.

Passing from the purely utilitarian and economic side of the timber ships to seek a more inspiring and romantic aspect surrounding the ships themselves, one is forced to conclude that the record is overcharged with tragedy and hazard. It was a North Atlantic trade, for the most part, and the North Atlantic is a gloomy, stormy ocean. The timber ships were designed to stow large cargoes and, thus loaded, very



Right:—A view from aloft, looking down on the poop.

few could be rated as clippers. A considerable number were great wooden boxes, scantily rigged, and fortunate if they made two voyages a season into the St. Lawrence. And into the business of freighting these wood cargoes came a too-great percentage of the broken-down crocks of shipdom — "hell-ships" in every sense of the term for the wretched crews who had to work them back and forth across the stormy Western Ocean.

In the course of time, the wooden ships passed away from the trade through the decay of old age, or, to the chagrin of underwriters and the joy of owners, by foundering at sea. The number of timber-carriers that passed out in the latter manner makes tragic reading. But as they retired from



Above:—The broad poop-deck, once the promenade of passengers, and the varnished leak deck-houses and skylights, betray the clipper ship. A view from the poop of the "Grand Duchess" looking forward.



Left:—Blowing along in a strong breeze under reduced canvas, the "Grand Duchess" carries her log cargo towards England at a ten-knot clip.

the scene, their places were taken by ships and barques built of iron or steel. At the period when these better-class craft began to show up in the ports of Canada, the overseas export of lumber was on the decline. The shipment of square timber, which attained its zenith in the 'sixties, diminished thereafter and ceased almost entirely by 1900. The remaining trade was principally in deals, with smaller exports of boards, spoolwood, pit-props, shingles and other sawn lumber.

Iron and steel sailing ships came into the Canadian lumber trade mainly because their day in more favourable services was done. Steamers were slowly but surely forcing them out of practically every other branch of bulk cargo transport. Canadian lumber gave the sailer a chance because it took time to stow and time did not add much to the expenses of a windjammer, but it meant a lot to the more expensively operated steamship. Thus, into numerous quiet little coves and harbours around the Canadian coasts—many of them merely saw-mill hamlets—came lofty ships and barques to lay at anchor or alongside a wharf and there leisurely take aboard a cargo for England, the River Plate, or perhaps South Africa and far-off Australia.

If any romantic atmosphere is to be woven into the history of the overseas freighting of Canadian forest products, it would centre rather more in this latter-day phase of the subject than in the age of the wooden ships. While their numbers were small in comparison with the vast fleets of earlier years, yet the

trade attracted some of the finest sailing vessels afloat. Many were renowned for their size, beauty and speed. Some had acquired fame as passenger packets in the Australian and New Zealand trade; others had raced wool to London from these southern outposts of Empire. Jute clippers from the Indian trade; West Coast Traders which used to run Pacific Coast grain or Chili

nitrate around the Horn—in these and other services they had won renown in the hearts of sailormen. And into the Canadian lumber trade they came at last, and often as well-kept and as well-equipped as in the days of their youth. For a period, money was to be made in carrying deals and spoolwood and charters were eagerly accepted.

At a time when steam reigned supreme, when turbine-driven ocean palaces had become commonplace and the layman fancied that the sailing ship was extinct, the lover of the old windships and the

traditions that went with them, could still indulge his heart's fancy in the sight of handsome ships and barques if he cared to journey to the obscure ports in which they loaded. A few years ago, one might view a lofty, four-masted skysailyarder loading deals for Buenos Ayres in a comparatively unknown port of Nova Scotia such as Tusket Wedge, near Yarmouth. Within the last thirty years, the writer has seen many fine and famous windships, still rated A.I. at Lloyds and capable of going anywhere, taking cargoes of lumber in places like Campbellton, New Brunswick, Annapolis, Digby and Yarmouth, Nova



Hove to under storm canvas. A view from the forecandlehead aboard the "Grand Duchess," off the west coast of Ireland, October, 1920.



Still in service in 1935, the Clyde-built steel ship "Grace Harwar," formerly British, now owned in Finland, is 46 years old and recently brought home a cargo of grain from Australia. She was also one of the last square-riggers to load in Canada and is here shown at Campbellton, N.B., a few years ago, loading lumber for Australia.

Canadian National Railways photograph.

Scotia, and in the River St. Lawrence at Matane and Cape Chatte.

As an instance of this—in the fall of 1920 two of the most famous iron sailing ships to plow the seas loaded lumber in the St. Lawrence for Great Britain. One was the wonderful four-masted ship *Lancing*—a craft of large tonnage and holder of many records in passages—which took aboard a cargo of spoolwood at Cape Chatte, Quebec, for Ardrossan. The other was a Russian full-rigged ship called *Grand Duchess Maria Nicolaevna* which loaded basswood logs in Montreal for Liverpool.

Built in 1866 on the Clyde as the French liner *Pereire* the *Lancing* was originally a crack Atlantic passenger steamer in the New York - Havre run. After some 20 years as a steamer, she was converted into a four-masted sailing ship — her fine lines and splendid construction making the conversion possible and profitable.

The other ship was equally as famous in her day though she was always a sailer. Built on the Clyde in 1873, she was originally the clipper *Hesperus* of the Orient Line's London-Australia service. At the time of her launch, and for many years afterwards, she was regarded as one of the largest, handsomest and most expensively fitted sailing ships under the British flag.

First as a passenger-carrying packet of the Orient Line and latterly as a British cadet ship, the *Hesperus* continued uninterruptedly on the run between London and Australia for 26 years. In 1899, she was acquired by the Odessa Navigation School as a training ship for Russian officers. Renamed after one of the late Czar's daughters (since slain by the Bolsheviks), the ship cruised the Black Sea under the Russian flag for another 13 years. In 1913, she was thoroughly overhauled in England and prepared for a further term of service as a cadet ship, though forty years old. Then came the War.

The *Grand Duchess*, unable to reach Russian waters, was laid up in Denmark. Russia turned Republican, then Bolshevik. In 1920, the ship was seized by those who remained faithful to the Royalist or Republican regime and brought to England. Being in splendid condition the old clipper was soon ready for service.

While awaiting a change in the political fortunes of Russia, when she would take up the thread of her life as a training ship again, the *Grand Duchess* sought employment. In keeping with the degradation suffered by Russia's aristocracy, this noble ship made her first commercial voyage in twenty years by coming across to Montreal in ballast to load a cargo of basswood logs destined for manufacture into matches in England. These logs were tree-trunks of various lengths with the bark still on. They were stowed in her hold and piled on the main-deck to the height of her rail. Owing to the irregular nature of the logs, the footing afforded the sailors upon the encumbered decks was anything but stable.

The writer sailed in the ship from Montreal to Liverpool, leaving on October 2nd and arriving in the Mersey on November 5th. The passage was not a particularly good one—head winds and bad weather being prevalent, an indifferent crew and the deckload of logs also acting as deterrent factors.

The *Grand Duchess* was possibly the most splendid ship to carry a timber cargo out of the St. Lawrence. She was lavishly equipped with all manner of training ship fixtures, and her gear and sails had scarcely seen the weather. Her entry into timber-droghing was a tragedy. Since the expected change in Russia did not materialize, the old ship made one more voyage — a trip to the River Plate. Then, in 1924, she was broken up. The *Lancing* also went to the shipbreakers that year. Both vessels were sound and fit for years of good service, but the usefulness of the sailing ship had passed.

The loading of the *Garthpool* — England's last windship — in Campbellton, N.B. in 1928 probably put a full stop to the record of the lofty square-rigger in Canada's timber trade. Many of our ports are doing business today in the shipment of lumber, but the craft that take it away overseas are mostly small Norwegian tramp steamers. The Golden Era of the trade and the sailing ship days, the boom times in Quebec, the Miramichi, the Bay Chaleur, the Bay of Fundy, are gone like the vast forests of pine that brought them into being.

Geography of World Events

THE GRAN CHACO

One of the out-of-the-way regions that is troubling the mind of a peace-loving world. For three years Bolivia and Paraguay fought over the possession of this area of 100,000 square miles, in the centre of South America, and at last have been persuaded to sign a truce, which it is hoped will be converted into a permanent peace. The Chaco contains valuable hardwoods, grazing lands — and, above all, oil. Neither Bolivia nor Paraguay have any sea coast. Paraguay, however, has access to the sea by the navigable Paraguay river. Bolivia covets that water route for her oil, tin and other minerals. Both have titles to the disputed area that run back to the period when they were Spanish colonies. Perhaps a way will be found out of the difficulty that will give each country in some measure what it needs.



ABYSSINIA



This is perhaps most serious, of the danger spots in the world of 1935. Abyssinia, like Paraguay and Bolivia, has no sea-coast, being cut off from both the Red Sea and the Indian Ocean by British, Italian and French colonies. Its area is about three-quarters that of Manitoba, and its very mixed population about four millions. By a convention signed in 1906, Great Britain, France and Italy guaranteed the integrity of Abyssinia. Hence the delicate situation created by the massing of Italian troops on the Abyssinian border. The crisis may be liquidated, as similar crises have been elsewhere, by economic concessions. What it will mean ultimately to Abyssinia, remains to be seen.



Washing the Gold Blanket

The heavy woollen blanket in the sluice box is capable of retaining only a certain quantity of black sand and gold. To guard against losing any of the precious metal, a clean-up is made twice a day or as often as considered necessary. At this operation the blanket is removed, washed free of gold and replaced securely in the sluice box once more. After a good clean-up the blanket may become quite yellow with fine gold. It is then verily a "magic carpet" (often a "fussy" carpet is used to catch the gold) and visions of another year at college, a bigger farm or the like, may fill young sourdoughs' minds as they methodically swish the blanket back and forth in a can of water.

Separating the Gold from the Black Sand by Amalgamation with Mercury

After the black sand and gold have been washed from the blanket, both are poured little by little into a large glass jar, and swished round with mercury. This operation is known as the amalgamation process, and depends for its success on the well-known physical affinity between gold and mercury. When the bulk of the gold has been collected by the mercury, the contents of the glass container are poured into the gold pan, where the last pin point of gold is "rounded-up" by the mercury. While this amalgamation process appears quite simple, it requires practiced skill, and a vast amount of patience

Hand-working a Fraser River bench claim

When the gold-bearing gravel is loaded into the wheelbarrow, it is then wheeled and dumped into a shoot where it is conducted to the actual washing operations. Of course many miners use gasoline power to pump and raise the water, but most of the smaller hand outfits cannot afford this artificial luxury. Pumps cost money, while hand bailing is free, though tiresome.

Washing Gold

As the gravel from the shoot reaches the dirt box, these two well-muscled young men start their perpetual-motion-like bailing with long handled buckets. In this way the gravel from the dirt box is washed over an A shaped wire grating, called a "grizzly". This separates the coarse gravel and stones which fall on either side. The finer gravel, black sand and gold is washed through the grating into what is termed a sluice box. The force of the water washes the lighter sand and gravel down the sluice box and away, while the heavier black sand and gold is caught and retained in a heavy woollen blanket, placed in the sluice box for this purpose.

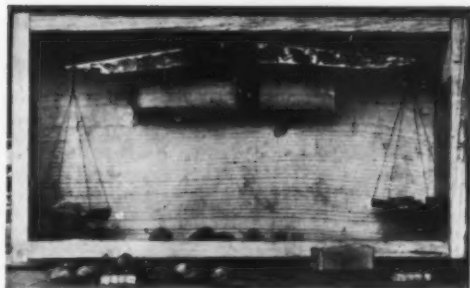


GOLD IN CARIBOO

By EDGAR CAMERON REID

PLACER mining in Cariboo, British Columbia, after nearly half a century of neglect was revived with a rush in 1933. With the steady advance in the price of gold, the year 1934 found many more miners working the bars along the Fraser River or shovelling gravel off the benches, when

the more profitable bars were covered by high water. The Fraser River, whose golden deposits started the trek into British Columbia in 1858, still lures the placer miner, and while the high price of gold lasts it offers adequate return for those equipped with willing hands, strong arms — and non-kinkable backs. And the sourdoughs of '35 are not waiting on harassed governments to provide them with fancy equipment, but are going right after the golden metal with the same enthusiasm and many are using the same equipment as did the "lads of the roaring '60s." Perhaps the indomitable spirit of youth has something to do with it, for the romantic, bewhiskered sourdoughs or the picturesque pig-tailed Chinamen for the most part have been replaced by younger men. Some of these are college men, "panning" their way through college, or technically trained men who are trying to keep out of the unemployed ranks. Men of the soil too are found plying pick and shovel, hoping to make



BUTTONS OF GOLD

At the end of each day a clean up is made and these home-made scales tell the story of how much gold was taken, valued at the prevailing market quotations. By this system an exact accounting can be made daily, or as often as desired. The button on the scales (the bar is about 9 inches long) is worth approximately \$16, valued at \$30 an ounce. The whole collection of buttons, valued at the same rating, would be worth nearly \$115, which represents quite a pile of gold when you see it all together.

a stake for farm operations. While some may have a little capital, the majority of the placer miners are trying to get by with the least possible expenditure in equipment.

In the vicinity of Alexandria, the southern limit of Sir Alexander Mackenzie's explorations on the Fraser River in 1793, are

gravel benches still bearing traces where the frugal-living Oriental searched for gold. There in the '60s, with gold around \$16 an ounce, the pig-tailed Chinamen ground-sluiced nearly 30 acres of land. Reports have it that when they left they were some \$40,000 richer. Today, three young Canadians are hand-working the gravel benches adjacent to these old "China Diggings," using equipment that savours of the primitive in design. This is constructed with such care and precision, however, and operated in accordance with such a well-conceived system, that little gold escapes them. While no large fortune is to be recovered in this way, they are at least making a successful go of it — with the traditional miners' sourdough playing a large part in their diet.

The photographs reproduced on facing and following pages show how they live, and illustrate the different processes in the recovery of the precious metal, from its removal from the benches, to the final amalgamated gold button, ready for shipment to the assayer.



The Sourdough Encampment

Here the sourdoughs of '35, "live, move and have their being," when at home at Sourdough Inn. The shelter is simply a roof of canvas, with two sides of the same material to protect them from the elements. Fir boughs, while not so conducive to rest as a feather mattress, still provide a sanitary and more or less comfortable reception to tired bodies. The stove in the foreground is strictly a home-made affair, being the result of days of beach-combing. The stove pipes themselves are a masterpiece in design and construction. They are the outcome of skilful rolling of "John D." cans, as our modern young sourdoughs would term discarded gasoline containers, that they have salvaged from here, there and everywhere.



Turning the Sourdough

Sourdough bannock, that effervescent and toothsome standby of the early miner, still plays a part in the mining of placer gold in Cariboo. Perhaps its cheapness and satisfying qualities have much to do with its resurrection among certain miners of '35, but be that as it may, many use it — and swear by it. These sourdoughs are started from yeast, potato water and flour — whole wheat preferred. In a warm place the yeast soon starts to work and when it has worked itself into a veritable frenzy of bubbles and ripened to a good degree of sourness, it is considered ready for use. It is then mixed with more flour and water, sufficient put to one side to act as a starter for the next batch, baking soda is added and a frying pan or griddle does the rest. If your digestion is strong and recuperative, and should opportunity permit, by all means try one. Not that these sourdoughs are not light-some, but simply that they are made "to stay right with a man" — and will too. They are intended to be followed by a "dessert," featuring rather strenuous activities with pick and shovel.

Beginning Operations

Before beginning to use this hand-made wheel barrow, three feet of top soil or "overburden," as miners term it, must be thrown to one side. The pay dirt, or the gold-bearing gravel, is found in regular or irregular deposits — depending on the current of the water at that time — beneath the accumulation of alluvial soil of later years. Most of the Fraser River benches or bars in this area yield fine gold only, and the illustrious paystreaks are located by assiduously taking test or yardage holes and then panning and weighing representative samples at frequent intervals. In this way, one can tell if the paystreak is running out, or if the gold is still present in sufficient quantities to justify continued operations.



Squeezing the Amalgam through a Cloth

When the last apparent colour has been collected by the mercury, amalgamation is then considered complete and the mercury is then squeezed through a chamois cloth, or a silk handkerchief will give good results. This separates the gold from the mercury. While the mercury passes through the cloth, the gold is left behind in the form of a "button" with only a small quantity of mercury still adhering to it. At this point the button looks for all the world like a ball of mercury, and one more step is necessary before the gold is ready for marketing.

Separating the last remnant of Mercury from the Gold Button

The button of gold, with a surface coating of mercury, is then placed on a hot iron plate, with a particle of paper to keep it from sticking to the iron. As the fire underneath begins to heat the plate, the mercury condenses, aided in this process by being covered with an uncooked potato. A slight tapping helps to gather the mercury, and it runs off into a container filled with water, and in this way the same mercury is used again and again. Our gold button (if later found pure by the assayer) is now ready to join the country's bullion, but before leaving the young sourdoughs' camp, it is weighed and valued on home-made scales.





Partial view of the Forum seen through the Arch of Augustus.



The Rome of bygone days. Chariot race in the Circus Maximus. From the picture by Alexander Wagner, by permission of the Perry Pictures Company, Malden, Mass.

GLIMPSES OF ROME

By CHARLES MURPHY

WHAT are the visitor's first impressions of Rome? For my part, I felt that nothing that I saw was wholly strange to me. The general aspects of the city were as familiar as if I had seen them before. There were the walls and the ruins and the churches and the monuments and the fountains just as I had long pictured them. In a word, I felt as if I had come home again. The classics and the historical lessons had not been entirely forgotten.

However, there was one impressive and constantly recurring feature of Rome for which I was not prepared. That was the extent to which the land watered by the Nile had contributed to the beauty and majesty of the city on the banks of the Tiber. Examples of Egyptian civilization, of Egyptian art and Egyptian architecture, are to be seen everywhere in Rome, and many of them are to be found in the Churches for which the city is famed.

There are no less than 423 churches. Of these the Pantheon, erected as a pagan temple in 27 B. C., is in several respects the most remarkable. It was consecrated as a Christian Church in 609. Circular in form the walls are

over 20 feet thick. The diameter of the rotunda and height of the dome are the same — about 142 feet. At the top of the dome is a circular opening 28 feet in diameter, and this opening is the sole source of interior light as there are no windows. Perhaps the most impressive feature of the Pantheon is the entrance colonnade. This is composed of 16 monolithic Corinthian columns of red and grey granite, each 41 feet high and $14\frac{3}{4}$ feet in circumference. These columns were brought by water from Egypt and slaves supplied the motive power. When we are inclined to boast of our achievements in modern building construction, it might be well also to keep in mind that the dome of the Pantheon is composed of a single mass of concrete. Beneath that dome is the burial place of the Kings of Italy.

St. John Lateran is known as the "Mother and Head of all the Churches of the World" and it has been the Cathedral of Rome for sixteen hundred years. To narrate the vicissitudes through which it has passed would fill a volume. It was magnificently endowed by Constantine and, notwithstanding the corroding hand of Time, and the still more destructive hand of



The Pantheon erected as a Pagan Temple in 27 B.C. Its walls are 20 feet thick and there are no windows. Light is admitted through a circular opening at the top of the dome.

the Spoiler, there still remain within its walls many examples of the work of the most famous Italian artists and sculptors.

Another Church to which great interest attaches is that of San Pietro In Vincoli, which is said to have been founded in 442 by Eudoxia, wife of Valentinian III, as a shrine for the chains of St. Peter which she had presented to Leo I. But the visitor of to-day is likely to pass over the multitude of interior attractions and concentrate his attention on Michael Angelo's masterpiece in sculpture, namely, the superbly powerful figure of Moses. The artist seems to have caught the majestic glance of the "prophet who spoke with God." Critics may find something to carp at in the details of the figure, but none of them will deny the sublimity of the whole. One of the innumerable stories told about Michael Angelo is that he became so infatuated with his work that when he had completed the statue he backed

away from it, and, addressing the seated figure, cried in a loud voice, "Why don't you speak?" At the same time he hurled his chisel at the statue and the flying tool made a dent in the right knee which can be seen to this day.

Most modern of the Basilicas of Rome, and the next largest to St. Peter's, is that of St. Paul's Outside the Walls. Situated on the road to Ostia, the ancient seaport of the Imperial City, it is built in the form of an Egyptian cross 394 feet long, 197 feet wide and $75\frac{1}{2}$ feet high. Passing through a graceful colonnade, decorated with marble busts and statues, and continuing on through a formal garden, the axis of which is a colossal marble statue of St. Paul, the visitor arrives at the front entrance to the Church. Just inside this entrance are six lovely alabaster columns, the gift of the Khedive of Egypt. The interior of the Church is dazzling in its magnificence. The floor, polished like a mirror, is of vari-coloured marble. The Nave has double aisles separated



A view from the air of the Basilica of St. Paul's Outside the Walls.

from each other by a forest of 80 towering granite columns; and there is a cornice above decorated with 74 portraits of the Popes done in Mosaics. Down to the Reformation the Kings of England were honorary canons of St. Paul's, which they invested in perpetuity with the Order of the Garter.

Cloudless Italian skies and a brilliant sun marked the day upon which I paid my visit to St. Peter's—the Church without a peer in all Christendom. The approach is through a vast square, in the centre of which is an obelisk standing midway between two fountains. The spray from these is blown by the breeze into curtains of mist which the sun paints with rainbows. Two sides of the square are bordered by long colonnades that curve inward towards the outer ends. There are four rows of columns in each colonnade, and the columns are so placed that when looked at from indicated places in the square there appears to be only one row instead of four. This optical illusion is

not an accident, but is exactly what the architect intended to produce.

The immensity of St. Peter's vast interior is disguised by the symmetry of its proportions, and its true magnitude becomes apparent only when it is studied in detail. For instance, the angels supporting the holy water fountains, which, at first sight appear life-size, on closer inspection, are found to be of enormous size. The calm and majestic beauty of the whole interior is further enhanced by the ceiling with its gilded coffering from an original design by Bramante. Not a little of the warmth of the interior finish is due to the coloured marble of the walls and pavement. These are the work of Della Porta and Bernini.

The work of all the architects and sculptors and painters who have combined to produce the mighty edifice finds a fitting culmination in Michael Angelo's stupendous dome. It is an architectural masterpiece, simple and dignified in design, and flooded with light. It is



One of the many beautiful chapels in St. Peter's.

supported by four immense piers, each 234 feet round. On the frieze below the drum of the arch is inscribed in letters nearly 6 feet high a Latin inscription which, translated into English, runs thus:—"Thou art Peter and upon this Rock I will build my Church, and I will give to Thee the Keys of the Kingdom of Heaven."

Closely adjoining St. Peter's is the Vatican Palace. The immense pile of buildings, without the gardens, covers an area of $13\frac{1}{2}$ acres, of which 6 acres are occupied by the interior courts, while the rooms, halls, audience chambers, chapels, libraries and museums are numbered in the thousands. The Pope lives in the Vatican and from there directs the spiritual lives of 342,000,000 Catholics scattered in all parts of the habitable globe. No other palace in the world approaches the Vatican Palace in interest, whether we regard its position in the history of the Church or the influence exercised by its collections

on the learning and taste of Christian nations for 300 years.

The lateral galleries in the far-famed Vatican Library, through which I was conducted by a competent and discerning guide, are each about one quarter of a mile in length. They and the rooms and side galleries and wings are packed with treasures to be found nowhere else in the world. Manuscripts in the hand-writing of the Apostles and others that greatly ante-date them; records of civilizations long-since forgotten save by a few scholars; examples of sculpture and painting never even approached save by the artists who produced them; books in endless number, beauty and languages—these are some of the things that make you feel you are moving amid the world's foundations and that without them no structure of civilization or culture would have any stability anywhere.

And every now and then you chuckle inwardly over the garnered evidence showing the worldly wisdom of the



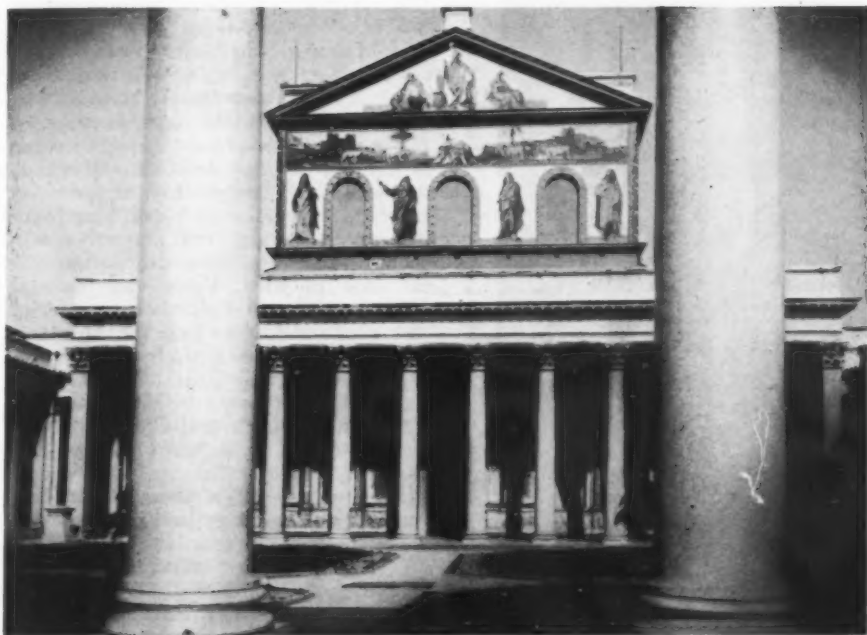
St. Peter's and the Vatican Palace. The foreground is a vast square with an obelisk in the centre flanked by two fountains.

Popes. On one of the Library shelves I noticed an amorous letter written in Old French by Henry VIII to Anne Boleyn while he was still the husband of Catharine of Aragon. Prior to its date Henry applied to the Pope for a divorce from Catharine. Instead of a divorce the Pope sent him a bull of excommunication.

I was also greatly intrigued by the way in which Pius VII gave historical permanence to an important incident in Napoleon's career. At Fontainebleau Pius VII was kept a prisoner by Napoleon for two years. Coincident with this act on Napoleon's part, he had carried off hundreds of the Vatican treasures. When it was proposed to release the Pope, he made it a condition of his release that these treasures should be returned to the Vatican. They were returned and the Pope built a special wing to contain them—and nothing else. An inscription over the entrance to this wing tells in a short and pithy sentence the whole story. Evidently,

Pius VII had not only a sense of retributive justice, but a fine sense of humour.

As surely as the needle is attracted to the pole so is the visitor to the Vatican attracted to the Sistine Chapel. Its paintings are the most awe-inspiring and majestic of all the Vatican treasures; and it is in a sense the forum and workshop in which Michael Angelo enunciated his creeds, philosophy and science through one medium—the form of man. The ceiling is 132 feet long and 45 feet wide, all adorned with figures and groups that have been the admiration of the world since they first were disclosed to an excited and enthusiastic audience in 1512, four years after the work was begun. There are 142 separate subjects and 394 figures. The largest of the latter are 12 feet high, and the smallest, 4 feet. Little wonder that the artist suffered from severe headaches during the remainder of his life as the result of this work, much of which was executed as he lay upon scaffolding and painted



St. Paul's Outside the Walls. Next to St. Peter's the largest Basilica in Rome. The interior is one of striking magnificence.

directly overhead. The scenes depicted are from the Book of Genesis and are probably the most sublime representations of the subjects in the world's art collections.

But much better known is the masterpiece painted on the rear or altar wall of the Chapel. It is "The Last Judgment" based on Dante's immortal poem and depicting scenes in Heaven, Purgatory and Hell. It took seven years to complete the picture. The damned are being hurled by devils, as in Dante's description, into an Inferno where Charon and Minos await them. Minos has the features of Biagio da Cesena, master of ceremonies to Pope Paul III, but no favourite of Michael Angelo. Like all the other figures in the composition, Minos was painted in the nude. To be thus handed down to posterity was regarded by da Cesena as an outrage, and legend has it that he complained to the Pope who, truth to tell, had not much sympathy for his master of ceremonies. However, Michael

Angelo was ordered by the Pope to paint some covering on the figure of Minos. The artist went back to his work and painted a serpent coiled around the loins of the figure. Again da Cesena complained to the Pope and was dismissed with this rejoinder:—"If the artist had painted you in Purgatory I might have been able to release you, but, as you know, out of Hell there is no redemption, and I can do nothing for you." And to this day the figure of Minos as Michael Angelo painted him appears in the lower right-hand corner of the most celebrated picture in the Sistine Chapel.

One of the most pleasant approaches to the Appian Way, which runs in a straight line from Rome to the southerly point of Italy, is through a beautiful park, and not far from the entrance stand the immense ruins of the Baths of Caracalla. In luxury and splendour they surpassed all the other baths of Rome. The main building was 632 feet long and 150 feet high, and contained



View from the Forum of the Colosseum where gladiators and wild beasts fought to the death and multitudes of Christians were butchered "to make a Roman holiday."

three public swimming pools, one of hot water, one of tepid water, and one of cold water, with accommodation for 1600 bathers at one time. As the visitor of to-day stands in the wreckage of the vast Central Hall he tries in vain to picture it in all its former magnificence of soaring column and coffered vault, its walls and pavements of precious marbles, its window grilles of Corinthian bronze, its heavy curtains of costly stuffs, its statues, fountains and multi-coloured mosaics. From this Central Hall the artistic beauty of the wonderful structure radiated as from a focal point. In addition to the portions of the building already mentioned, it included private bath rooms, dressing rooms, a gymnasium, Greek and Latin libraries, lecture halls, a picture gallery and assembly rooms. Among the underground features was a remarkable system for heating the whole building, and this was kept in running order by thousands of slaves. These baths, with their surrounding gardens, theatre and grounds for gymnastic exercises, were at least one mile in circumference and nothing in modern times has been built to equal them. In the 16th and 17th centuries the Belvedere Torso, the Farnese Hercules, the Farnese Flora, and many other statues were found among the ruins. Since then further excavations have greatly enlarged the area accessible to the public. It was within these ruins that Shelley composed a large part of his *Prometheus Unbound*.

Circular in form the Colosseum was built in A. D. 72, and had accommodation for 62,000 spectators. Its exterior dimensions were: length 558 feet, breadth 510 feet, circumference 1719 feet, height 159 feet. In the arena contests between gladiators, slaves, captives and condemned criminals, wild beast hunts, sea spectacles, and a multitude of other savage entertainments, were provided for the blood-loving public. In the same arena were butchered unnumbered thousands of Christians "to make a Roman holiday." The 1000th anniversary of the foundation of Rome was celebrated with games in the Colosseum where a battle was fought between 1000 pairs of gladiators, and thirty elephants were slain, besides hundreds of other animals, including a

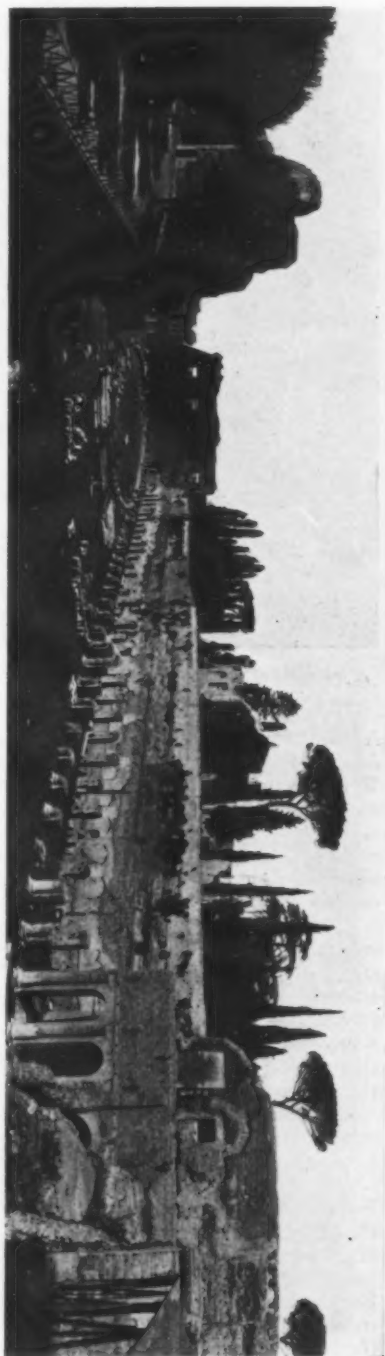
hippopotamus and a rhinoceros. At the Triumph of Probus in A. D. 281, 100 of the finest breed of Numidian lions were simultaneously released into the arena, their tremendous roars seeming to shake the huge building to its foundations. And all this savagery took place in the presence of the elite of Rome, who sat in the midst of magnificent specimens of the sculptor's art.

Looking at the shabby cluttered-up ruins of the Circus Maximus as they are to be seen to-day it is difficult to visualize what the vast place was like in the days of its glittering magnificence. Located in the valley between the Aventine and Palatine hills, it had, according to Pliny, accommodation for 260,000 spectators. It was 1875 feet long and 625 feet wide, and was used principally for chariot races. Running lengthwise through the middle of the arena was a low marble wall decorated on top with statues, obelisks and other artistic objects. This wall was called the *Spina*. At either end stood a *Meta*, or turning post, and the skill of the charioteers was shown in driving as close as possible to this post without grazing it.

As a form of exhilarating mental exercise, the writer would recommend the visitor to Rome to try to picture the Circus Maximus at the height of its splendour, when from the lofty altitude of the neighbouring Imperial Palace, the Court looked down upon the great race-course, the marble *Spina* resplendent with its gilded columns and adornments, the brilliant uniforms of the charioteers, and the vast audience of 260,000 people shrieking and waving in a frenzy of excitement as the sand scattered in clouds under the flying wheels. And with such a spectacle in his mind's eye, the visitor might profitably remember that, as a rule, there was no charge to see such entertainments, as the emperors provided the populace with them as pacifiers!

There are at least 425 fountains in Rome. Space will allow me to speak of only one of them. This is the famous Trevi fountain. It is an example of the florid Baroque school of art and occupies the greater part of a small square. It is supplied with water by an aqueduct originally constructed by

Domitian's Stadium built for public spectacles or military exercises. According to some archaeologists it was also used as a winter garden.





A fragment of the Baths of Caracalla, 632 feet long, 150 feet high, with three swimming pools accommodating 1600 bathers at one time.

Agrippa for his baths near the Pantheon. At the top of an incline is a figure of Neptune in a chariot drawn by Tritons and preceded by sea-monsters. On either side of the chariot the water enters and rushes down a terraced slope, dotted with tumbled rocks, in a series of noisy cascades that discharge into a quivering pool at the bottom. A centuries-old superstition declares that to throw a small coin into the pool before leaving Rome ensures the return of the thrower to the Eternal City. After the visit of a crowd of gullible tourists, there ought to be good night-fishing in the pool for the Roman street urchins.

It would probably not be much of an exaggeration to say that every building in present-day Rome stands on the ruin of an older and long-buried building. Excavations are being made throughout the city under the direction of Mussolini, and some of these have disclosed that many buildings of Twentieth Century Rome are super-imposed on two or more ancient dwellings. The sides of the deeper excavations reveal to the

student of archaeology strata of former civilizations just as the strata in the face of a stone quarry reveal to the student of geology the processes and periods of the earth's formation. But what has most interest for the average tourist is the fact that from several of these excavations have been recovered beautiful specimens of the architecture and sculpture for which the artists of the ancient Empire were renowned. To the Italian artists and architects of to-day Mussolini has afforded such scope and opportunities for the exercise of their talents that when his official term has ended he will be able to say with even more truth than Augustus "I found Rome a city of brick: I left it a city of marble." His monumental work in restoring the ancient grandeur of the City on the Seven Hills has given fresh vitality and conviction to what Bryce said about Eternal Rome:—"Its importance in universal history it can never lose. For into it all the life of the ancient world was gathered: Out of it all the life of the modern world arose."



San Giovanni a Porta Latina. A 5th century Church rebuilt in 772 and several times restored.



The Paolo Fountain — one of 425 in Rome.



The ford whose possession assured victory to De Salaberry. One is struck by the incongruity of linking this tranquil landscape with the fury of battle.

Photograph by Max Saver, Jr.

CHATEAUGUAY

By ALLAN DALE

I SUPPOSE that every intelligent river, looking back across the years, must find one event that stands out above its fellows. We know too little about the thoughts of rivers to judge what particular event would so stir the heart of the Chateauguay; but if there is anything in the human theory of opposites, that placid stream will remember the battle of October 16th, 1813.

It is not easy, as one wanders along its banks, to think of it in the noisy and brutal terms of war. How could man ever have brought himself to break the peace of this gentle river? There is all about it an air of such serene calm that the clash and clamour of arms seem fantastic. To the Chateauguay the grim fact of nearly a century and a quarter ago must take the fearful form of a nightmare.

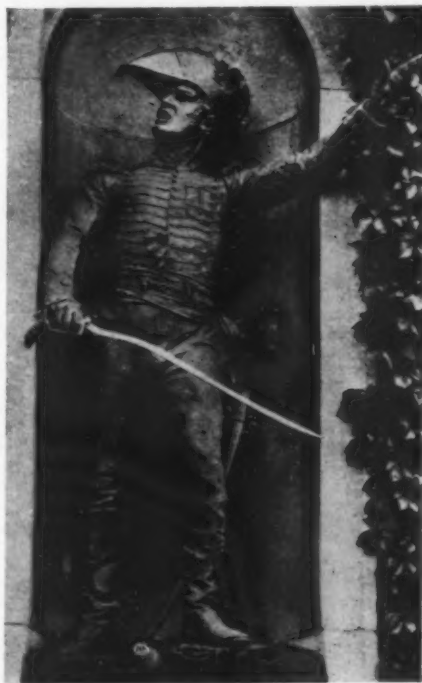
For countless ages it had made its tranquil way from the south to mingle its waters with the mighty St. Lawrence. Man came in time to its banks. First the restless Indian, moving swiftly but quietly in his canoe, or drifting like a shadow through the trees. Then the White, building his home by the banks of the Chateauguay, clearing the land, planting seed, reaping his harvest. Children came, and schools, and roads, churches and social life. It was

a placid community, reasonably content with its simple comforts and pleasures. Montreal was much farther away than it is to-day. To go there was a novel and arduous experience. The Chateauguay and its pioneers got along very well together. They had much in common. Then came the deafening uproar of war.

The War of 1812-14 seems a very small affair to a generation that has known the Great War. And yet it was momentous enough to the little scattered settlements of pioneers in the Canada of 122 years ago. They were defending their homes against the invading armies of a powerful neighbour. That perhaps more than any other one thing accounts

for their success. The man who fights for the things that are most dear to him is doubly armed.

This is not the place to attempt to tell the story of the War of 1812-14. All that we are concerned with here is the small part of it whose stage was the Chateauguay River. In the late autumn of 1813 two American armies were moving toward the St. Lawrence, one from the west and the other from the south, their purpose being to capture Montreal. They were inspired with the not unreasonable belief that to capture Montreal was to conquer Canada. Fortunately for the



Statue of De Salaberry, in the facade of the Legislative Building at Quebec.



Defending the stockade at Chateauguay. From the painting by Henri Julien.

colony their generals were bitterly jealous of one another, and their plans fell awry. Wilkinson was turned back at Chrystler's Farm, and Hampton at Chateauguay.

Hampton had completed his preparations on the west side of Lake Champlain. He had about 4,500 regulars and a large body of militia. It was known on the Canadian side that his objective was the St. Lawrence, but there were several ways by which he might get there. Indeed it was for a time a game of hide and seek, and small bodies of Canadians were sent out to watch his movements. Even when he reached the settlement known as Four Corners, on the Chateauguay, there were several alternative routes that he might elect to take. He chose the route that followed the river, travelling with his main force down the north bank. It should be explained that the Chateauguay, after it crosses the boundary into Canada, runs more or less parallel to the St. Lawrence, emptying into the main stream opposite Lachine.

Opposed to the invading army was a much smaller force of Canadian militia,

Voltigeurs under the command of De Salaberry and Fencibles commanded by Macdonell, the former French-Canadian lumbermen and voyageurs, the latter for the most part Glengarry Scots, Highlanders transplanted from the old land to the banks of the St. Lawrence.

Hampton's advance down the Chateauguay was by no means so simple a matter as it might seem to one who goes over the ground to-day. The nature of the country has changed, as Robert Sellar points out in that mine of information *The History of Huntingdon*. "It is now a great, smooth plain, calculated to excite the admiration of every lover of good farming, level as a floor, edged on one side by the Chateauguay and on the other by a thin fringe of bush, the sole remnant of the primeval forest. In 1813 the square, flat fields, which now present themselves in unvarying succession, were represented by a narrow strip of clearance, full of tree stumps, which ran along the river bank, with the forest from which it was carved walling it in and occasionally, where the backwoodsman's axe had so far spared it, intervening. The thick foliage of



*An elm that in its youth saw the Battle of Chateauguay.
Photograph by Max Sauer, Jr.*

the all-pervading bush sheltered the soil from the sun and wind, with the result that the rain accumulated on its level surface and formed a marsh, from which at frequent intervals there were small creeks flowing into the Chateauguay."

These creeks had gradually washed away the deep clay soil and flowed at the bottom of ravines. De Salaberry and his men set to work to tear up the bridges and fell trees on the bank of each ravine so as to form barricades. The Americans had to cut a road through the bush, lay down corduroy to get their artillery over the swamps, and fight their way across each successive ravine. A small body of determined men could, and did, hold an army in check at each barricade, falling back at the last moment to the next.

The entrenchments ran from river to swamp, so that no flanking movement

was possible on this side of the Chateauguay. Hampton's plan was to send a strong body of troops down the south bank, cross the river at Morrison's ford, and attack the Canadians in the rear while the main army forced its way through the barricades. Neither he nor his officers, however, had been over the ground, and knew nothing of the conditions.

Colonel Purdy, with 1500 picked men, crossed over to the south bank at sunset on October 25th. The night was dark and cold, and the Americans ill-clothed. Presently rain began to fall. The men stumbled disconsolately through heavy bush, and floundered into an unexpected creek. Purdy called a halt and waited for daylight. "The long night wore wearily on; cold,

wet and wretched in their light summer uniforms, they dared not light campfires, and their only food was what they happened to have in their haversacks."

At the break of dawn Purdy got his discouraged column in motion. They had to travel through what was little better than a hemlock swamp, and progress was slow. A few stragglers broke through the bush and appeared on the river's bank, where they were seen by Canadian outposts and word was sent to Macdonell who was guarding the ford. Macdonell at once sent two companies of the Fencibles to the south side of the river, under Captain Daly and Captain Bruyere. Daly led his men through the woods until he came into touch with the enemy. The American advance guard fell back and became entangled in the bush. In the confusion that followed they were fired upon by parts of their own main body. Moving

Battlefield Monument, Chateaugay. The inscription reads: "Here the army invading Lower Canada and marching on Montreal was repulsed and routed by the Militia of the Province. Erected by the Canadian Parliament 1895."

out of the swamp onto the river's bank, Purdy's men were met with a withering fire from Canadians posted on the other side of the river. Finding themselves, as it seemed, between two fires, they broke in confusion and took cover in the forest. Purdy gathered together his disorganized force, which took no further part in the battle.

Meanwhile Hampton's troops, under General Izard, hearing the sound of guns on the south side, pushed on rapidly, expecting that Purdy would have captured the ford and that De Salaberry was now securely trapped. Slowly falling back, the Canadians took their stand behind the principal barricade. De Salaberry had the bugler by his side sound a call,



which was answered from various points. This and the enthusiastic cheering of the Canadians sounded as if a large body of troops was advancing.

The Americans came to a stand in front of the timber breastwork, waiting for Purdy to complete his movement. But Purdy was otherwise engaged, and, learning in time of his discomfiture, Hampton withdrew his force. Having the next day been rejoined by Purdy, he retreated to the Four Corners, and shortly afterwards

Chateaugay Memorial. Placed on the Battlefield by the National Sites and Monuments Board of Canada.



*A scene of pastoral beauty; of peace and rest; suggesting nothing of the conflict that once raged up and down these banks.
The former in the foreground cultivates land that was once part of the field of battle.*

Photograph by Max Sauer, Jr.



The village of Chateauguay in 1830. From the water colour by Bainbridge in the Public Archives of Canada.

marched his army back to Lake Champlain, bringing an end to his rather inglorious campaign.

As C. P. Lucas says, in his *Canadian War of 1812*, "The actual fighting had hardly amounted to more than a skirmish. None the less the results were those of a great and decisive victory. With the most trifling loss a handful of men had repulsed an invasion, broken up a combination, and given security to Montreal."

It is worth remembering, incidentally, that this invasion of Canada



Chateauguay church. Dates back to the French period, about 1735. Parts of the building have been restored.

was the work of politicians, and that not merely were the better elements in the United States out of sympathy with it but many of them were strongly opposed. Nor should it be forgotten that, with the exception of sporadic raids by irresponsible agitators on the American side in 1837-38 and 1866, peace has been maintained between these two neighbouring nations for over 140 years.

The Chateauguay saw war again, though this time it was a domestic quarrel, in 1838. But



De Salaberry leading his men at the Battle of Chateauguay. From the drawing by C. W. Jefferys. in "Canada's Past in Pictures" (Ryerson).

enough of war. It is more pleasant and profitable to catch random glimpses of the quiet little stream in times of peace, and no where will one find them so happily and completely given as in Robert Sellar's book. Here is a picture of a hunter's paradise before 1820: "In every direction the deer-runs could be met with in the woods, all leading to some creek or river. Deer were to be met with not singly but in herds . . . Old Mr. McClatchie boasted that 365 deer had fallen to his rifle. He shot probably the last moose seen in the district . . . Catamounts were rarely met with, but bears, especially near swamps, were plentiful, and occasional stragglers have been killed as late as 1870. Wolves were hunted and shot without mercy. Beaver were trapped as late as 1820, and otter were also occasionally shot . . . Salmon were plentiful during their season, and in the rapids opposite Huntingdon were speared as late as

1825. Of the flocks of pigeons, quails, ducks and, more rarely, geese, the statements of the early settlers would be incredible were they not so well substantiated. In the spring and fall they darkened the sky like clouds and where they lit vegetation was destroyed."

It appears that bullfrogs were also plentiful along the Chateauguay. A story is told of a young Scot, new to the country, who was kept awake by their chorus. "This maun be an awfu country" said he "the beasties the fouk kept were maist bulls, and had kept rowtin a' nicht." Chateauguay folk insisted the frogs repeated the names of early settlers:

William Ogilvie! William Ogilvie!

Ralston! Ralston!

Williamson! Williamson!

Wright! Wright!

Transportation became a problem, as settlers came into the country. Roads

were few and bad, and the river itself became the natural thoroughfare. Canoes were built, of the primitive pattern familiar to readers of *Robinson Crusoe*. "The largest available pine-tree was sought out, felled, and had the top cut off, when the trunk was shaped and hollowed. The canoes averaged 3 feet wide by 30 long, and were generally managed by 3 men, two to row and one to hold the steering paddle. When rapids were reached the men jumped into the water and, thrusting a stick through holes at bow and stern, worked the canoe up, half lifting, half pushing it zig-zag among the boulders where the water was deepest . . .

"Each rapid had its name. Thus the rapid at Ormstown was *rapide croche*; the one above, blotted out by the dam, *rapide coteau*; and the next, a mile farther on, *rapide sauvage*. That at Dewittville was emphatically named "the portage", for it was too shallow and rapid for the canoes to be pushed, and they and their loading had to be carried, the help of a yoke of oxen being called in. The rapids at Huntingdon were too long to be passed, and the canoes ended their journey at their foot.

"From Reeves to Huntingdon, nearly 30 miles following the windings of the river, was a long day's journey, and, strange to say, the up-trip did not take much longer than the down-trip, the current making little difference in summer time, when the water was low, and the men preferring low water as then the danger of striking boulders and upsetting was less. The load in ascending was immigrants and their baggage and provisions, and in descending potash. The load was 2 barrels (950 lbs.) but there were canoes large enough to take three. The charge for conveying a barrel from Huntingdon to Reeves was a dollar."

It was lonely work pioneering, particularly for Old Country people who had been accustomed to village life in England or Scotland. A Paisley man tells of his experiences. His lot was some distance from the river, and he thought it would be a good idea to prospect a road. He wandered on and

on, scrambling over logs and through swamps. "So desolate was the scene that the very dog that was with me sat down at the foot of a tree and yowled." On another occasion, while making his way through the forest, he heard a noise and, turning about, saw two bears following him. The advice a fellow settler had given him flashed into his mind. "I bent my head until I could look between my legs and began dancing and capering. The brutes looked at me for a moment or two and then, affrighted by the strange spectacle, turned and fled." Could one blame them?

One final glimpse, of a pioneer school on the Beauharnois. "They were always log buildings, and in one a couple of short pieces were worked loose by the boys, making in warm weather a convenient exit. The roofs were covered as often with slabs or broads, eked out with turf, as shingles. What the scholars suffered from cold is not to be described. The modern woodpile was then unknown. The fuel was drawn in log lengths, and the first boy in the morning had to apply himself to chop off enough to start the fire, and as it needed replenishing the master detailed one or two boys to renew the task. Each family supplied half a cord for every scholar sent under a certain number. Walking several miles through the snow, insufficiently clad, and having only for dinner the 'piece' they carried, such pursuit of knowledge could only have been possible to the hardy children of a hardy race.

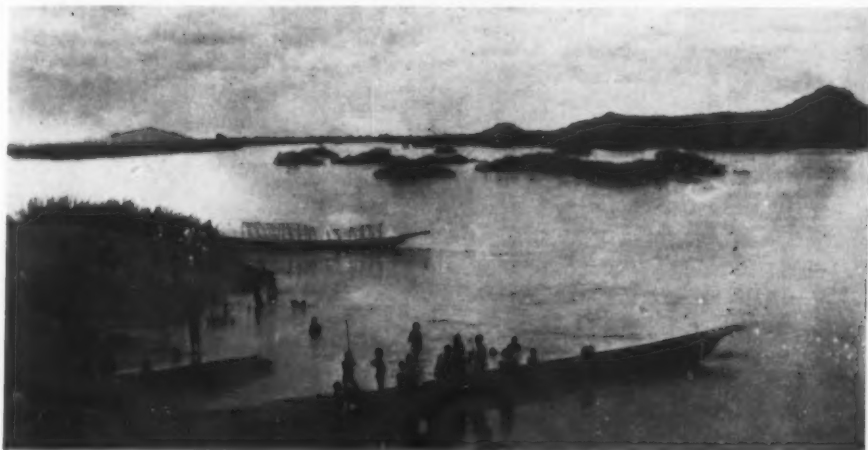
"Occasionally the schoolmaster occupied one end of the schoolhouse as a dwelling, so that the scholars were tickled by hearing what passed on the other side of the board partition and by the oft appearance of the wife to consult her husband. One master utilized the loft above as a winter roost for his hens, and, when they scraped, a shower of dust descended on the heads of the scholars below, who would be excited by suppressed merriment when, on a biddie's clucking, they overhead the remark of the housewife, 'Eh, but the gudeman will hae an egg the morn.'"



A native village on the banks of the Niger.



Some of our native (Hausa) servants. The objects carried by the man in the centre are yams.



Native canoes on the Niger. Navigation on its upper waters, except during the rainy season, is confined to these and pole barges.

In a Pole Barge on Nigerian Rivers

By E. D. WARD

THERE are two methods of travelling on the great river from which Nigeria takes its name and on its main tributary, the Benue — by steamer and by pole barge.

The Niger and the Benue, like the Nile, are seasonal rivers. During the rains (June to October) small stern-wheel vessels of shallow draught can navigate as far as 1,000 miles inland from the Bight of Benin. The majority of these vessels are comfortable: European passengers are accommodated on the upper deck, where they make their own arrangements for catering and service, but the voyage is, to say the least of it, dull. There is nothing to do, and no means of taking exercise, and frequently there is but a single passenger.

During the remainder of the year there is insufficient depth of water for steam navigation, and those whom duty compels to travel are obliged to avail themselves of the much slower, but more interesting, pole barge. These barges are made of steel, and are divided into four open compartments — the middle two being protected against the sun by a galvanised iron roof covered with grass matting. The forward compart-

ment is for the use of the eight polers: the second is reserved for the passenger (or passengers — there are never more than two): the third accommodates the personal servants, and the aft compartment is given over to the cook, the headman of the polers, and a helmsman. The poles used are known as gongolas — they are the dried mid-ribs of the palm-leaf, and are straight and very light and of great strength.

Progress naturally is slow — about 20 miles per day against the current is the maximum. The polers are magnificently developed men, and they usually work hard and cheerfully, but it is no light task to propel a steel barge weighing 3 to 4 tons against a stiff current. Very often, too, precious hours are wasted in searching for a channel through a maze of sand-banks or even, at very low water, in digging a channel — shovels are always carried for this emergency.

It may sound very dull — this slow progress day after day with nothing to look at except sand and water, but it need not be so. The traveller is in the strange position of being both passenger and at the same time in



A typical small stern-wheel vessel on the Niger.

supreme command of his barge. He alone gives the necessary orders: when to stop for meals, when to tie up at night, and when to get away again in the morning. He can "go ashore" at any moment and come aboard again at his own good pleasure. "Going ashore," be it understood, consists merely of getting out when he is tired of sitting in a long chair, and walking along a sand-bank parallel to the course of the barge.

There is plenty of shooting to be had. The sandbanks are covered with teal, sand grouse and duck, and reasonable proficiency with a shot-gun will ensure many welcome variations to the daily menu. For those who prefer something larger, an evening stroll with a rifle into the bush bordering the river will rarely be without tangible result, as small deer of all sorts abound. There is no lack of enthusiasm among the polers, tired through they may be, to carry the carcass back to the barge: fresh meat is a rare luxury for them.

A gramophone is a most useful thing to carry, and it also serves to keep the polers thoroughly cheerful, partic-

ularly if one has been thoughtful enough to bring along a few of their native records. Food, water and literature can be replenished at the various trading stations en route. The Nigerian rivers are well developed commercially, and rarely a day passes without a call at a trading station. The more important of them are in charge of a European, who is as glad to see the traveller as the traveller is to see him.

The barge of course ties up for the night against a convenient sand-bank. It is just possible to set up a camp-bed in the passenger's compartment, but it is far more enjoyable to sleep out on the sand-bank. There is no fear of rain in the dry season, and a fire maintained all night by the polers is an effective safe-guard against any prowling beast. A close-mesh mosquito net is essential—the mosquitoes and sand-flies are myriad.

The halt for the night is usually made just before sun-down, in order to give the polers time to prepare their evening meal before dark. It is the pleasantest time of the day: the burning tropic sun is well down in the west, and a cooling bath in the river is most enjoyable.



Sandbanks relieve the monotony of sitting in a long chair on the barge.

There are crocodiles in the rivers—plenty of them—but the noise of making camp frightens them away, and if one keeps well to the shallows there is no risk at all. After the bath comes a laze in a long chair with a smoke and the evening drink, and by the time that is finished it is time for the cook to serve dinner.

Meals are of course rather a trial. Fowls and eggs are readily obtainable at any native village, but if the traveller wants fresh and varied food he must depend very largely upon his prowess with shot-gun and rifle. Ample supplies of tinned foods of all sorts are available at the various trading stations, so there is no fear of actual hunger, but tinned food is neither appetising nor nourishing. Water taken from the river must always be boiled and filtered before drinking;

in fact, it is safer to drink nothing but mineral water unless one is prepared to supervise the cook continuously in order to ensure that the water really is boiled and filtered.

By the time the evening meal is finished it is quite dark. It is not advisable to light a lamp, as it attracts thousands of winged insects which make life a burden. After a final smoke and a few records on the gramophone—not too many, as the polers have had a hard day—it is prudent to get under the mosquito net: the anopheles mosquito is an insect to treat with respect, and five grains of quinine are the invariable precautionary adjunct to the evening drink.

Once in bed sleep comes easily; the fierce heat of the day is tiring, and early rising is essential if the barge is to get away in good time in the morning.

Western Adventurers

Dr O. J. Stevenson, of the Ontario Agricultural College, made an automobile journey across the continent with his wife last summer, and went out of his way to visit the monuments to David Thompson and La Vérendrye in North Dakota. In a letter to the Editor he says:

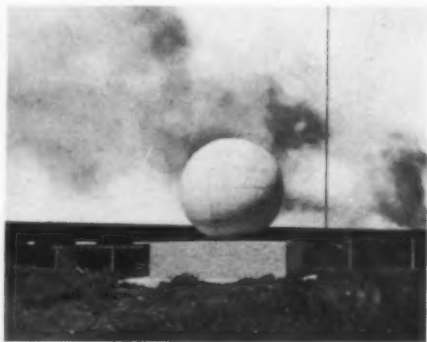
"It was about 6.30 a.m. when we turned in from the highway to try to find the hamlet of Verendrye. We had been misdirected and after a number of adventures, enjoyable in retrospect, we at length reached the village about 8 o'clock. We got breakfast at a little inn kept by a German woman, who told us that the evening before she had



La Vérendrye Monument at Sanish, North Dakota.

listened on her radio to Hitler's speech from Germany justifying the slaughter of five hundred suspects. There was something in the association of La Vérendrye, Thompson and Hitler on this Dakota prairie that caught our imagination. We went over to the Thompson monument and were moved by the record in its inscription which contrasted strangely with the tall grain elevators standing up on the horizon half a mile away, and a passing freight train on the one hand and our motor car on the other brought us abruptly from the wide sweep of these prairies in Thompson's time to our own century.

"From Minot we turned south to see the Vérendrye monument at Sanish. Although we had run into a heat wave of over 100° it was a lovely day and we enjoyed the experience. The monu-



Thompson Memorial at Vérendrye, North Dakota.

ment is a rather insignificant boulder, but there is a glorious view from the hill-top where it stands — the Missouri winding among the low hills to the south, and to the north unbroken plains.

"From Minot we went west, and on reaching Vancouver took a small coasting steamer into the fiords down which Mackenzie came at Bella Coola. From there we crossed to Stuart Lake, where Simon Fraser and later James Douglas dreamed dreams which were to become splendid realities."

It is not altogether creditable to Canada that we have left it to American enterprise to commemorate the achievements of two of the greatest of Western Canadian explorers.



Alexander Mackenzie Monument, Dean Channel, B.C.

PEOPLE OF MALACHI

By CLAUDE W. GRAY

Water colour and pencil sketches by the author

THE Indians of our lakes and woods are being increasingly studied by artists and writers in Canada on account of their individual character, nearness to nature and their community of feeling. In these mechanical times it is with a pleasant sense of relief that one turns to these Americanized Mongols to find them happy and on the whole healthy and increasing in number.

Last year I went into their summer camp at Malachi, and knowing a few who had seen me at work around the lakes, was able to converse and make a number of sketches of them. Usually one meets an odd Indian about the traders' wharves, but it requires a certain determination to row up to their summer reserve even when the majority are away. Still their dogs, supposed to be dangerous, are as a matter of fact not even inclined to bark except at night. As one pulls up to the shore the word is passed along, and some of the children gather about one more out of curiosity than anything else, while the Indian and his squaw manifest only a slight surprise as they are accustomed to be photographed at intervals.

Old George the patriarch, but not the Chief of the tribe, was away and I only found his squaw, 'Old Charlotte' at home outside their tent mending moccasins. Later their son-in-law, a local councillor and interpreter for the Indians, appeared. I was then completing a sketch of the ancient lady after giving her

some tobacco. To him I suggested finding a model wearing Indian costume. He at once went over to a group of women and children and soon they dressed a little girl in her gala dress and gathered about me I as made a portrait of her. I had to wave them back as it is difficult for any model to sit still in a crowd. Finally I completed the accompanying sketch of Go-Chees a typical Indian child.

At first I thought the name was pronounced Ogis but later on showing the study to adult Indians they gave it as Go-Chees, and the trader, Mr. Howard, confirmed it. The fact is that all semi-barbaric races have a wide range of pronunciation. The proper noun gradually changes until it becomes unrecognisable, as we know was the case in the times of ancient Greece.

Though the Indians prefer geometric form and primary colours they displayed a lively interest in the sketch and it was some time before they had seen enough of it. After lunch I returned from my camp and sketched "Old George" as he sat in his canoe. He proved such a good model that the water colour was completed within an hour.

Next day he came over to my camp on his round of selling netted "tullibee," and as we lunched together on a beach log we discussed game and canoe trips, and as his old face grew animated at the prospect of the coming season I once more transferred his expression to paper.



Old Charlotte was using white man's needle and thread to mend Old George's moccasins, of which he wears out three pairs a year.



Cornelius and his motherless boy whose persistent crying made the sketch difficult.

contribution, and he immediately recognized the sketches I had made at Malachi. He was very talkative and interested in the activities of white people, and I had no difficulty in getting him to sit for a rapid sketch before he departed to sell his morning's catch at various summer cottages. I gave him a copy of my sketch of his acquaintance "Old George" and we parted good friends. These older Indians have a good deal of genuine character. They may be close in their dealings and backward

Later I made studies of two young married men, Mitchell a Chipewewa and Cornelius perhaps a Saulteux, and would have got a better one of the latter's little motherless boy but for his persistent crying when confronted by a white man. Possibly Indian children cry more than white children.

Whilst sketching the fine Norway pines at Mr. T. T. Bower's Minaki summer cottage "Wildedge" I met Wolverine at his family's summer camp. Between us we provided a lunch of which a large bowl of tea was Wolverine's



I had no difficulty in getting Wolverine to sit for a rapid sketch.

The child Go-Chees who posed as a model for me in gala dress.

in repaying loans but it seems to me that the white man is much to be blamed. The Indians are shrewd enough to assume a childlike simplicity and guilelessness which, however, should not deceive the intelligent.

Amongst themselves they are great conversationalists and orators. With the Indians of the Plains this gift was almost a recognized failing. They have wonderful memories, with a vast store of historical background, which provides them with native lore in place of newspapers. I was particularly inter-



ested in their domestic life and industry, especially in their productions from birch bark. Their cookery remains much of a mystery though I enjoyed the light bannock they made out of wheat dough in open pans.

Naturally they keep much to themselves, but occasionally more or less amusing gossip reaches the summer homes. As with some white people money is much of a curse to them. There is a story with cash involved, told of old George and Charlotte that is at least original.

Old George, the patriarch of Malachi, proved to be a good model.



Sketch of Mitchell, a young Chippewa of Malachi.

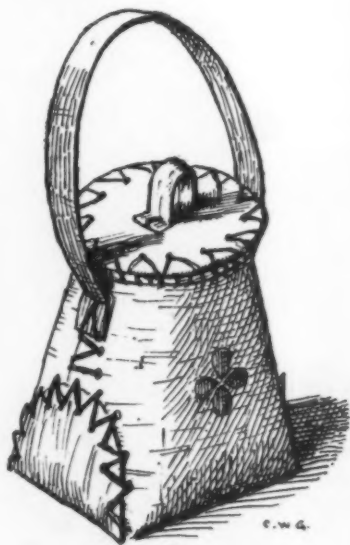
Old George one day went off with his scythe to mow the grass before one of the summer cottages. Charlotte followed later and was waiting by the dock till he appeared with the money he had received for the job. This she demanded; he objected to handing it over, so she struck him on the head with the paddle and he fell into the water. Jumping into the canoe she went off alone. George then borrowed a canoe from an old timer and followed her home. Several days elapsed before George returned with the borrowed canoe and explained the delay by saying that Charlotte had punctured the canoe in several places with a nail and he had to spend some time and money for repairs.

They are both regarded as being of fabulous age, though it is reported that George had a brother twenty years older and the story goes that he shrivelled up into a mummy and never really died. This reminds one of the remark—"Old Soldiers never die they

merely fade away." George appears to be younger than Charlotte but after their occasional domestic upheavals she threatens to leave him and take a younger husband!

Both the Indian and our regard for him are changing. As the glamour of adventure in his wild lands abates the red man appears less colourful but more interesting from the social point of view. Indian art has a strong appeal and it is being produced in fair quantity and excellent quality all over the country. The white man shut up with his machines may do worse than go to places like Malachi and watch the Indian woman worker under her outdoor shelter, with a number of children chiefly girls around her, all attentive, and all beginning to manipulate dyes, roots, birch bark and other rather untractable material into things of usefulness and beauty.

The Indian is a beauty and nature lover to an extent only apprehended by students and writers like Miss Skinner. Her new book *Beaver Kings and Cabins* gives a fresh insight into



Small Malachi Birch Bark basket 10" high

whatever is known of Indian beliefs. Of their ceremonies only the annual pow-wow is known at Malachi and that but at second-hand. The white man does not venture to intrude though the occasional Indian and squaw is seen in the background of the white visitors' corn-roast and sing-song. Both festivals have something of thanksgiving about them, both are noisy, and the Indians are very active with the dance.

Both races for the most part find the community spirit necessary in the wilds, and both resort to somewhat

similar devices as a means of counter-acting the monotony of life. Neither the Indian nor the White find the worship of beauty entirely satisfying. The animal side of existence has to be kept in mind

and as far as possible sublimated in expression.

The Indian has been the more fortunate in preserving this duality whereas the White man has erred in too violently fluctuating between the vigorous expression of animalism and the more spiritual and beautiful sides of life.



An Indian signpost at the point where Winnipeg River leaves the Lake of the Woods.



The beauty of the primitive wilds appeals both to Indian and White.

Editor's Note Book

Our Contributors

The articles in this number range in place from the old timber ships of the Maritimes and Quebec, the Chateauguay River, an Indian community in Manitoba, and the Gold Fields of British Columbia, to Rome and the Niger River. Frederick William Wallace puts his usual enthusiasm and wide knowledge into his story of the Timber Ships. Allan Dale emphasizes the contrast between the rural charm and simplicity of the Chateauguay of to-day and the warlike scenes it has known in the past. Senator Murphy, who wrote an exceptionally interesting article on Oberammergau for the *Journal* in February, 1934, now gives us his impressions of Rome. Claude W. Gray, a Winnipeg artist, takes us with him on a visit to some of his Indian friends, the People of Malachi. Edgar Cameron Reid says some timely things about the revival of placer gold-mining in British Columbia. E. D. Ward describes a barge journey on Nigerian rivers.

Sunspots and Canadian Weather

An important astronomical study and one which may in time provide a basis for valuable predictions concerning the weather and living and economic conditions is that of sunspots. These spots appear from time to time on the face of the sun and fluctuate in numbers and size in an irregular period with an average length of 11.1 years, commonly called the "eleven-year sunspot cycle." Sunspots are usually accompanied by large areas of bright clouds, high in the solar atmosphere and consequently relatively strong emitters of ultra-violet light. When sunspots are most

numerous ultra-violet light reaching the earth may be double the amount received when they are scarcest. Ultra-violet light ionizes the upper atmosphere of the earth and when spots are numerous there are more aurorae, greater disturbances in terrestrial magnetism, telegraphy, and radio than when they are scarce. Ionization promotes haziness and cloudiness in varying degrees during the progress of the sunspot cycle and serious changes in weather and effects on living things result.

Investigations at the Dominion Observatory, Department of the Interior, Ottawa, of the Canadian records of temperature, precipitation, thunderstorms, agricultural grains, grasshoppers, grouse, rabbits and fur-bearers, and measurements made at the Observatory of the annual growth-rings in trees from various places in Canada, reveal the influence of the sunspot cycle in varying extent and phase, dependent on the region. The influence is of course only an average one, and is complicated in individual years by the many other factors involved. In the long run, however, its effects are clearly indicated.

Temperatures throughout Canada are higher at sunspot minima than at maxima. The range varies from about 1 degree Fahrenheit to 4 degrees Fahrenheit with a mean value of about 2 degrees Fahrenheit. In the Prairie Provinces the range is high, Calgary for example showing 4 degrees Fahrenheit higher temperature at minimum than at maximum in the mean.

Thunderstorms are more numerous at sunspot minimum than at maximum in general throughout Canada. The

Toronto records show about 30 per cent more thunderstorms at sunspot minimum than at maximum. Forest fires due to lightning consequently fluctuate in numbers, in the sunspot cycle.

Governor General Elect Expresses Interest

In a recent letter from Lord Tweedsmuir to the Editor of this Journal the Governor General Elect says: "I am deeply interested in what you are doing in Canada, and hope the magazine will soon have a real success"

Jessie Matthews and Sonnie Hale are perhaps the most popular couple on the British screen. Both are under contract to Gaumont-British Picture Corporation.

Jessie's next picture is "First a Girl," a fine romantic comedy. Sonnie is co-starred in Jan Kiepura's latest musical success, "My Heart is Calling," which is showing in Canadian theatres.

THE SMOKE OF THE BRITISH EMPIRE

Jessie Matthews and Sonnie Hale, whose whimsically brilliant screen comedies have delighted millions in British and Canadian audiences, lead an almost Arcadian existence in the seclusion of their Hampton estate by the Thames.

They may be tending the garden. They may be looking after the chickens and ducks. They may be in front of the camera putting their inimitable personalities into their laughter-giving art. Wherever they are, at work or at play, when they take a few minutes to enjoy a cigarette, they smoke W. D. & H. O. Wills' Gold Flakes.

W. D. & H. O. WILLS'

GOLD FLAKE

CORK TIP OR PLAIN
CIGARETTES

*A shilling in London
—a quarter here.*

Copyright
Photograph
Courtesy
Gaumont-British
Corporation,
London.

Pocket tin of fifty - 55 cents.



Precipitation at inland points is greater at sunspot minimum than at maximum, the Prairie Provinces having in the mean about 50 per cent more precipitation at minimum than at maximum of spots. At oceanic points, such as St. John's, Newfoundland, the opposite is the case, greater precipitation occurring at sunspot maximum. Other points blend these terrene and aqueue reactions of opposite phase in varying degrees.

Forms of life are affected in harmony with the particular meteorological cycle in each region. At inland points the annual growth-rings of trees and the numbers of grasshoppers, grouse, and rabbits are considerably greater at or near sunspot minimum than at maximum. A range of from 17 to 27 bushels to the acre in the average of Canadian wheat, oats, barley, and rye is shown in the mean eleven-year sunspot cycle for the years 1908 to 1929, the greatest mean yield occurring near sunspot minimum, though the record is far too short for precise evaluation of the sunspot influence. Potatoes for the same interval show a 25 per cent greater yield at sunspot minimum than at maximum. All such records should of course be considered for each region separately.

The last sunspot minimum occurred near the end of 1933 and the next maximum will probably be in the middle of 1938. Fuller knowledge of the sunspot cycle will, it is believed by scientists, eventually assist in permitting long range weather forecasts of a general nature, thus providing valuable information relating to forest protection, wild life conservation, and other matters of social and economic importance.

Geographical Medals

At the annual general meeting of the Royal Geographical Society, held in the Hall of the Society in London, on June 24th, the Medals and other awards were presented, in the presence of H. R. H. the Duke of Kent. The Founder's Medal went to Major R. A. Bagnold, for his journeys in the Libyan Desert; the Patron's Medal to W. Rickmer Rickmers, for his long continued travels in the Caucasus and Russian Turkistan;

the Victoria Medal to E. J. Wayland, for his work on the Quaternary geology of Uganda and the Rift; the Murchison Grant to R. P. Bishop, for his surveys in British Columbia; the Back Grant to Wilfred Thesiger for his journey through the Danakil country in 1933-34 (Mr Thesiger's book has been reviewed in this *Journal*); the Cuthbert Peek Grant to A. R. Glen for his work in Spitsbergen; and the Gill Memorial to E. E. Shipton for his surveys in the inner Nanda Devi basin.

A Bigger and Better Journal

The Canadian Geographical Society is maturing plans for adding to its membership and enlarging the *Journal*. The second necessarily depends upon the first. The revenue from a substantial addition to the membership of the Society will make it possible to add another section of sixteen pages to the magazine, without increasing the fees. Every member has it in his or her power to hasten this desirable improvement by sending in to the Society, either to its official headquarters at 172 Wellington Street, Ottawa, or to the publication office of the *Journal*, Sun Life Building, Montreal, the names of those who wish to join the Society and further its good work for Canada.

The Geographical Magazine

The *Journal* is still so young that it must speak with a proper degree of modesty in welcoming to the fold a new and very attractive recruit, *The Geographical Magazine*, published in London, and edited by one who is carrying on the traditions of a famous family, Mr Michael Huxley. Judging from the first two numbers, *The Geographical Magazine*, promises to fill a place of its own in the field of Geography. Its policy, broadly speaking, is similar to that of the *Journal*, that is, to provide information in attractive and readable shape to the non-technical reader. It differs from the *Journal* in one obvious particular. No obligation rests upon a Geographical periodical published in England to give more than occasional attention to the Geography of the British Isles. The field of *The*

THE CANADIAN GEOGRAPHICAL EDUCATIONAL DIRECTORY

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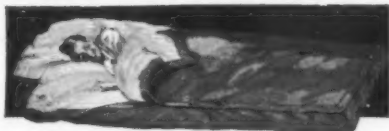
Geographical Magazine therefore is the whole wide world. On the other hand, it has seemed to the Canadian Geographical Society that while such innumerable matters closely associated with the Geography of Canada remained to be described and interpreted, its first duty must be, for many years to come, to its own particular field, and only in a limited degree to the outside world.

One notes with approval this statement of policy on the title page of *The Geographical Magazine*: "The founders of The Geographical Magazine have undertaken legal obligations to assign one half of all profits which the Magazine earns to a Fund for the advancement of exploration and research and the promotion of Geographical knowledge. This Fund will be administered by a Board of Trustees whose chairman will be the President of the Royal Geographical Society." The same principle underlies the policy of the Canadian Geographical Society, and will be put into operation just as soon as economic conditions make it possible to realize a profit from the publication of its *Journal*. It rests largely with the members of the Society to hasten the day when this will become practicable. Double the membership and we will be well on the road to a substantial profit, to be devoted to the same praiseworthy purposes which our English contemporary has in view.

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Travel - Adventure - Recreation**Canadian Arctic Expedition, 1935**

R. M. S. *Nascopie* sails from Montreal on July 13th for the Eastern Arctic, with Major D. L. McKeand in charge and a staff of experts to study such problems as the health of the Eskimo, archaeology of the Button and adjacent islands, physiography of the coasts of Hudson Bay and some of the Arctic Islands, insect life of Baffin, Devon and Ellesmere Islands, fur-bearing animals and other forms of wild life from the point of view of Arctic food problems, and the establishment of geodetic astronomical positions for geographical and scientific purposes. The Expedition expects to reach the eastern entrance to Hudson Strait about July 23rd, spend the remainder of that month and most of August in Hudson Bay, and the early half of September visiting posts on Baffin, Devon and Ellesmere Islands, the northernmost point being Craig Harbour on the last-mentioned island. As this is the most northerly post office in the British Empire, stamp collectors are taking advantage of the voyage of the *Nascopie* to send mail there.

An Intensive Hunt for Minerals

As the result of economic conditions, very few field parties have been sent out by the Geological Survey of Canada during the last few years. In 1935 the situation is completely reversed. Parliament having voted \$1,000,000 for a Dominion-wide scheme of geological surveys and investigations, pretty well the entire staff of the department will be involved directly or indirectly. Field parties under the direction of experienced geologists have already been sent to various parts of the country, in some cases to the more thickly settled parts of Ontario and the Maritime Provinces, in others to the northern parts of Quebec, Ontario and British Columbia, and in such out-of-the-way districts as the country north of the Churchill and

west of Hudson Bay. For parts of this region about all that is known is what was gathered by Samuel Hearne, of the Hudson's Bay Company, in his journey to and from the Coppermine River 165 years ago. Full advantage will be taken here as well as elsewhere of that extraordinary helpful means of transport the aeroplane, and, apart from the possibility of direct discoveries of deposits of precious and semi-precious minerals, a great mass of important geological information will be gathered in addition to the mapping of canoe routes and other topographical data. There can be little doubt that, quite apart from the point of view of employment, the results of these widespread surveys will much more than justify the amount expended.

Engineering Dreams

The Advent of *The Geographical Magazine* reminds one of the spectacular predictions made by Leopold Amery, former Secretary of State for the Dominions, at the meeting held in London in April to mark the publication of its first number. Mr Amery pictured engineers as some day damming the Strait of Belle Isle and, by shutting out the northern icebergs, changing radically the climate of the country about the Gulf of St. Lawrence. He suggested that some day the Bosphorus would be closed by a 200-foot dam, bringing back conditions of thousands of years ago when the Black Sea, the Caspian and the Sea of Aral were all one. Damming the deep gorge of the Blue Nile offered infinite possibilities of increased fertility for the cotton fields of the Sudan and Egypt. Draining the vast swamps of the Upper Nile would create an enormous area of agricultural land. The ancient irrigation system of Mesopotamia probably would some day be reconstructed on an even larger and more effective scale. The Barren Lands of Northern Canada would be brought within the realm of systematic colonization by reindeer and

musk oxen; and the fertile clay belt south of Hudson Bay would be drained and brought under cultivation. Another engineering dream is the letting of the sea into part of the Sahara and transforming the arid region about it into a land of milk and honey. Mr Amery might have added another Canadian illustration in the proposed dam across the St Lawrence, between Montreal and Quebec, that would forever solve the problem of deep water navigation on that important waterway.

An Indian Fable

Egerton R. Young, in that once popular book of Western Canadian travel, *Stories from Indian Wigwams and Northern Camp-Fires*, tells the following story about John Sunday, a shrewd Indian missionary, who prevented two of his people from going to law to settle a dispute about the exact location of their boundary fence by offering them this horrible example of the fate of the disputatious:

"Once upon a time an Indian was walking on the shore of Rice Lake when he saw a big black-snake out looking for his breakfast. He looked here and he looked there, under this log and in that dense bush, until at length near a marshy place he saw a great big bull-frog. At him he rushed, and at length he managed to catch him by the hind legs and at once began to swallow him. The frog was a very large one and resisted with all his might. He struggled and pulled and jumped this way and that way, and tried to shake off the snake, but he could not succeed. But in his struggles he managed to make the snake's body fly around like a whip-lash until the tail came so near that the frog was able to catch hold of it in his forefeet. Holding on tightly to it, the frog at once began to swallow it while the snake was hard at work swallowing him from the other end. And thus," he added gravely, "they went on swallowing each other until there was nothing left of either of them."

Alpine Journal

Among a number of excellent articles in the May number of the *Alpine Journal* one notes an account of the Crossing of the Coast Range of British Columbia, by E. B. Beauman, and an article by T. G. Longstaff and M. H. W. Ritchie on The Shores of Baffin Bay. Messrs Longstaff and Ritchie were members of J. M. Wordie's Expedition of 1934 to the Canadian Arctic.



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Amongst the New Books

North-West by North. By Doris Birtles.
Toronto: Jonathan Cape. 1935. \$3.

The narrative of a voyage in a 34-foot cutter from Sydney to Singapore, by two men and three women. One of the latter tells the tale. The route was by way of the Great Barrier Reef to the Dutch East Indies and beyond, and involved all kinds of strange adventures, not the least entertaining arising from the forced companionship of five assorted people on a small boat for eight months.

* * *

Bahamas: Isles of June. By H. MacLachlan Bell. New York: Robert M. McBride and Company. 1934. \$2.75.

Major Bell, with the benediction of the Governor of the Bahamas, describes the history, mystery and charm of the many islands large and small that make up that ancient colony—a happy land where tired business men may rest among delightful surroundings.

* * *

La Belle au bois dormant. Par Marguerite Bourgeois. Trois-Rivières. 1935.

In this attractive little book—No. 7 of the series Pages Trifluviennes—Miss Bourgeois has made an important and very readable contribution to the extraordinary collection of historical studies, memoirs and reminiscences that has been produced in the historic town of Three Rivers.

* * *

La Grande Aventure de Jacques Cartier.
Par J. Camille Pouliot. Quebec.
Librairie Garneau. 1934. \$1.25.

Like some other wise men, Judge Pouliot has for many years past devoted the leisure hours of a busy life to a congenial avocation, and in his case one that is of permanent interest and value. To what he had already written so entertainingly on the Island of Orleans,

he has now added a substantial volume on Jacques Cartier and his voyages of four centuries ago, including the text of the Relation Originale, with numerous historical notes, maps and illustrations.

* * *

Red Road through Asia. By Bosworth Goldman. London: Methuen and Company. 1934. 12/6.

One is inclined to agree with the London Times that this is the best account of Soviet Central Asia that has yet appeared. Mr Goldman travelled by sea from London to the Kara Sea, then up the Yenesei into the heart of Western Siberia. From Krasnoyarsk he took the Trans-Siberian Railway, and the newly-completed Turk-Sib Railway to Tashkent, Samarkand and Bukhara. He gives an extraordinarily interesting account of that high and dry but once romantic region, as influenced by Soviet ideas. From Bukhara he made his way to the Caspian Sea, to Azerbaijan and Armenia, Tiflis and Batum, and by way of the Black Sea to Constantinople.

* * *

Atlas de France. Par le Comité National de Géographie. Paris: Editions Géographiques de France. Each volume 50 f. Single sheets 20 f. Postage extra. Price to subscribers to the complete Atlas, 40 f. a volume.

The National Committee on Geography, founded in 1920 on the initiative of the Academy of Sciences of France, took as one of its principal objects the preparation of a comprehensive Atlas designed to illustrate the physical structure and economic life of France. Substantial progress has already been made in this very important project, some 24 sheets having now been published, covering the density of population in 1931, isothermal lines, mineral resources, metal industries, textile industries, telegraphs, movement of



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population, administrative divisions, foreign population, annual precipitation, agricultural population, maritime ports, and several other subjects. The Atlas, as at present planned, will consist of four main divisions, Physical, Biogeography, Economic Geography and Human Geography, including altogether something over 100 sheets. The admirable quality of the sheets already issued, from every point of view, make it certain that the Atlas of France will take its place among the most authoritative of national atlases.

* * *

Grey Owl, whose Indian name is Wa-Sha-Quon-Asin, needs no particular introduction to Canadian readers, who have read of his amazing success in making friends with that most shy of animals the beaver, and have seen evidence of it in moving pictures. Now Grey Owl has put some of his experiences into a book (*Pilgrims of the Wild*. Macmillan Company of Canada, Toronto, 1934. \$3.75). For years he has devoted himself to the task of saving from extinction, in Northern Ontario and elsewhere in Canada, our smaller fur-bearing animals, and particularly that clever and industrious little creature that is looked upon as the emblem of the Dominion. In this book he tells the story in his own characteristic way, and it is a story that will appeal to all lovers of the wilderness and its inhabitants. Also he illustrates it with his own spirited sketches.

* * *

There is a story that many hundreds of years ago a party of Viking adventurers travelled from the Atlantic by way of Hudson Bay, the Nelson River, Lake Winnipeg and the Red River into the heart of Minnesota. Whether inspired by their example or otherwise, a couple of lads set out in a canoe from Minneapolis not long ago, and travelled by way from Minnesota to York Factory on Hudson Bay. They tell the story in their book (*Canoeing with the Cree*. By Arnold Severeid. Macmillan Company of Canada, Toronto, 1935. \$1.75) and tell it very well indeed.

